



2005 NRI Photography Report

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Topics

- Review the 2005 NRI photography acquisition
- NRI_Register Software
- 2005 Landsat acquisitions

USDA Small Area Photography Contract

REQUEST FOR PROPOSAL

SOLICITATION NUMBER: USDA-NRCS-2-05

USDA SMALL AREA PHOTOGRAPHY AERIAL PHOTOGRAPHY SERVICES



U.S. DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY
AERIAL PHOTOGRAPHY FIELD OFFICE

NOTICE TO OFFEROR

Any proposal submitted for this RFP must be identified with the following information labeled on the outside of the mailing package:

SOL.NO: USDA-NRCS-2-05
DUE DATE: 23-FEB-2005, 4:30 PM
RECEIVING OFFICE: CONTRACTING

Mail To: AERIAL PHOTOGRAPHY FIELD OFFICE
CONTRACTING OFFICER
2222 WEST 2300 SOUTH
SALT LAKE CITY UTAH 84119-2020

NOTICE TO PROSPECTIVE OFFERORS:

This RFP is for an Indefinite Delivery Indefinite Quantity (IDIQ), fixed-price contract. The contract covers the base year (2005) and four option years (2006 through 2009).

Contract awards shall be made prior to issuance of any task orders. Task orders are the method by which project item areas are awarded. Task order proposals shall be submitted as a separate document from the contract RFP proposals.

Any proposal submitted in response to this solicitation must be presented in two parts, a pricing proposal and a technical proposal. See Section L for proposal preparation instructions.

This procurement for nationwide small area aerial photography is designed to promote economy and efficiency of image acquisition by providing offerors flexibility in the selection of their area of interest and quantity of sites proposed.

The complete text of any or all clauses referenced herein may be obtained by submitting a request, identifying this solicitation number, to the Contracting Officer, USDA, FSA, Aerial Photography Field Office, 2222 West 2300 South, Salt Lake City, Utah 84119-2020. Complete copies of the FAR in loose-leaf or CFR form may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402.

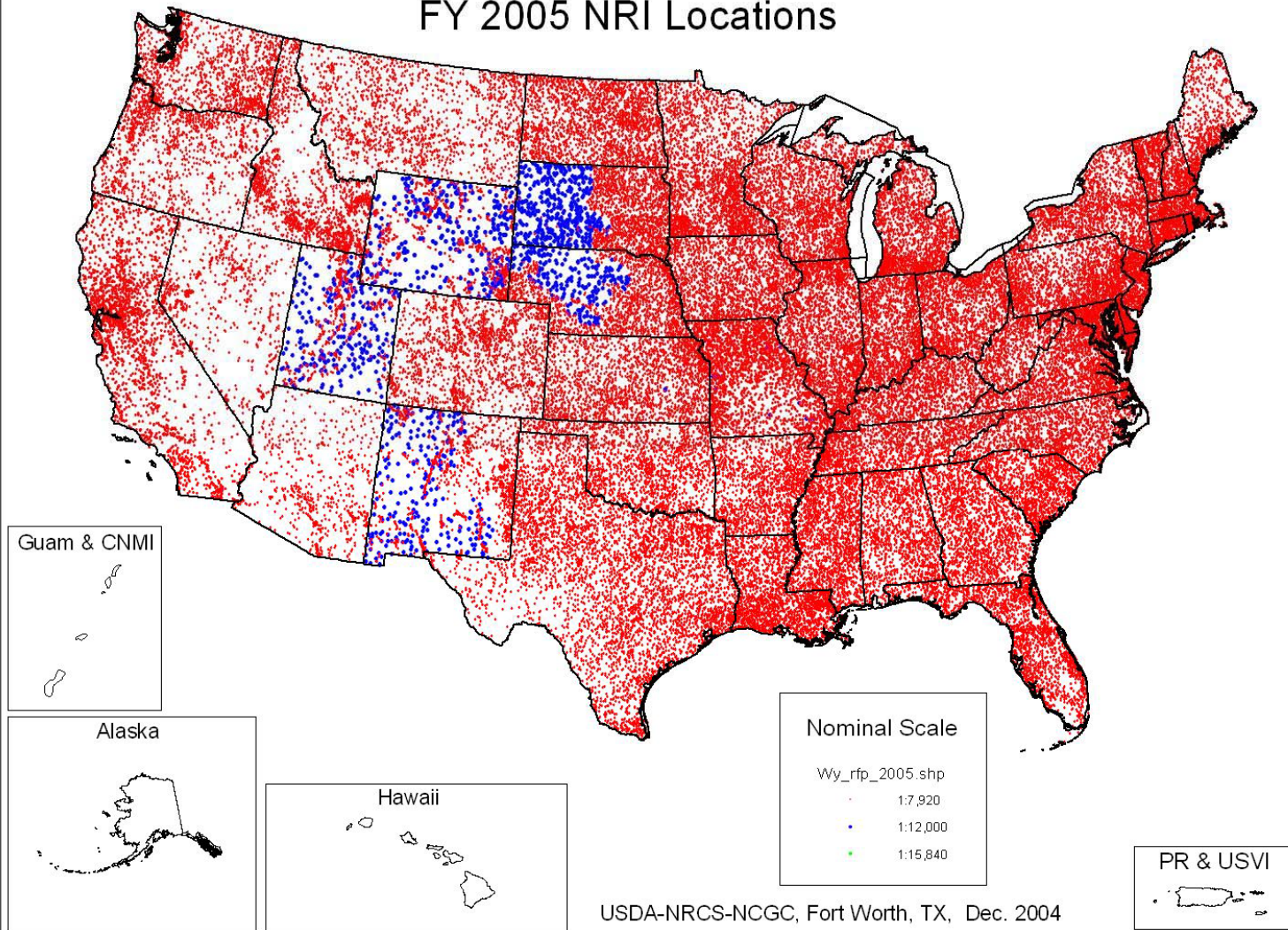
- 5-yr IDIQ contract
 - ◆ 2005-2009
- 6 companies
- Options for
 - ◆ Flying services
 - ◆ Scanning
 - ◆ Orthorectification

2005 NRI Locations (70,406)

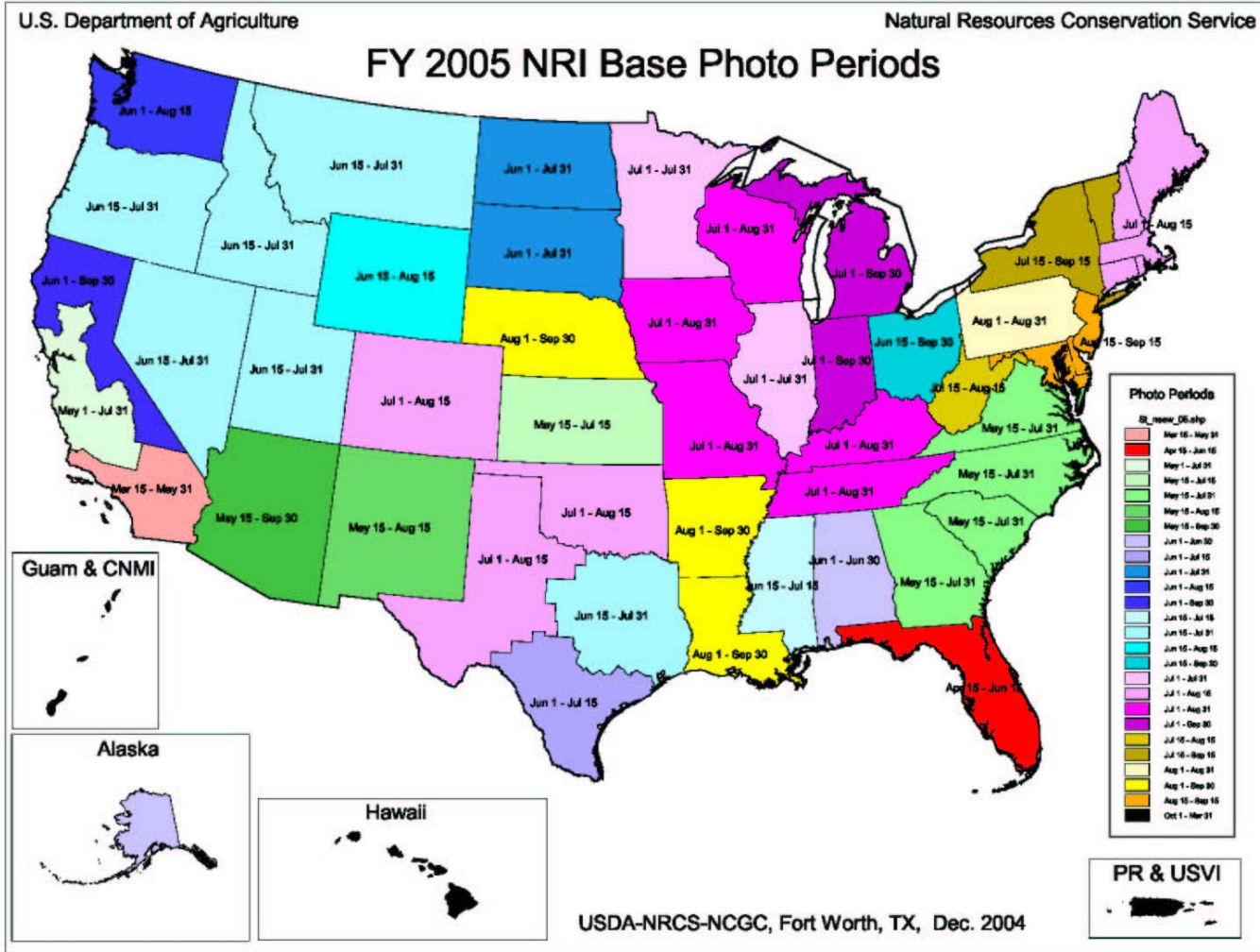
U.S. Department of Agriculture

Natural Resources Conservation Service

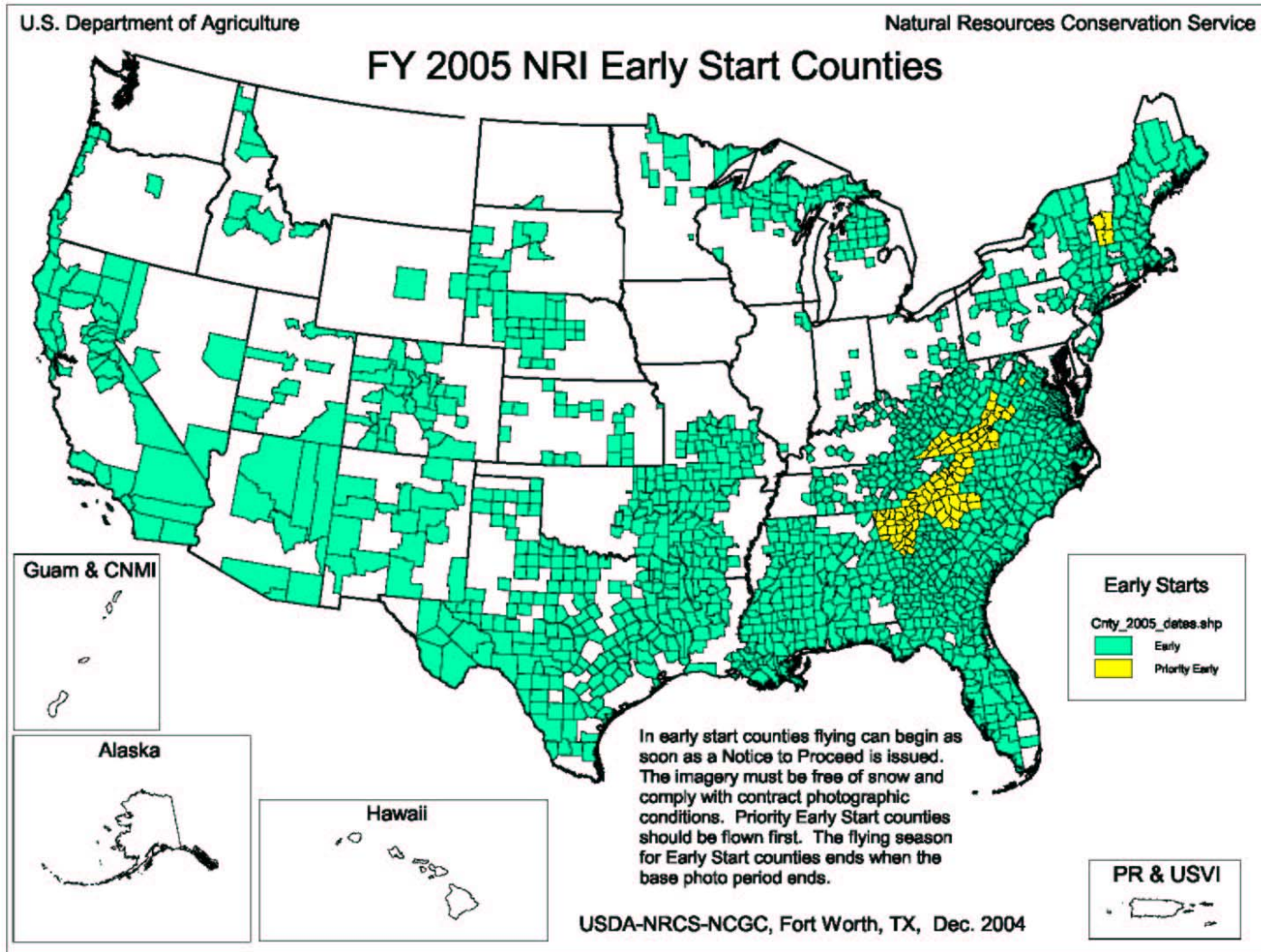
FY 2005 NRI Locations



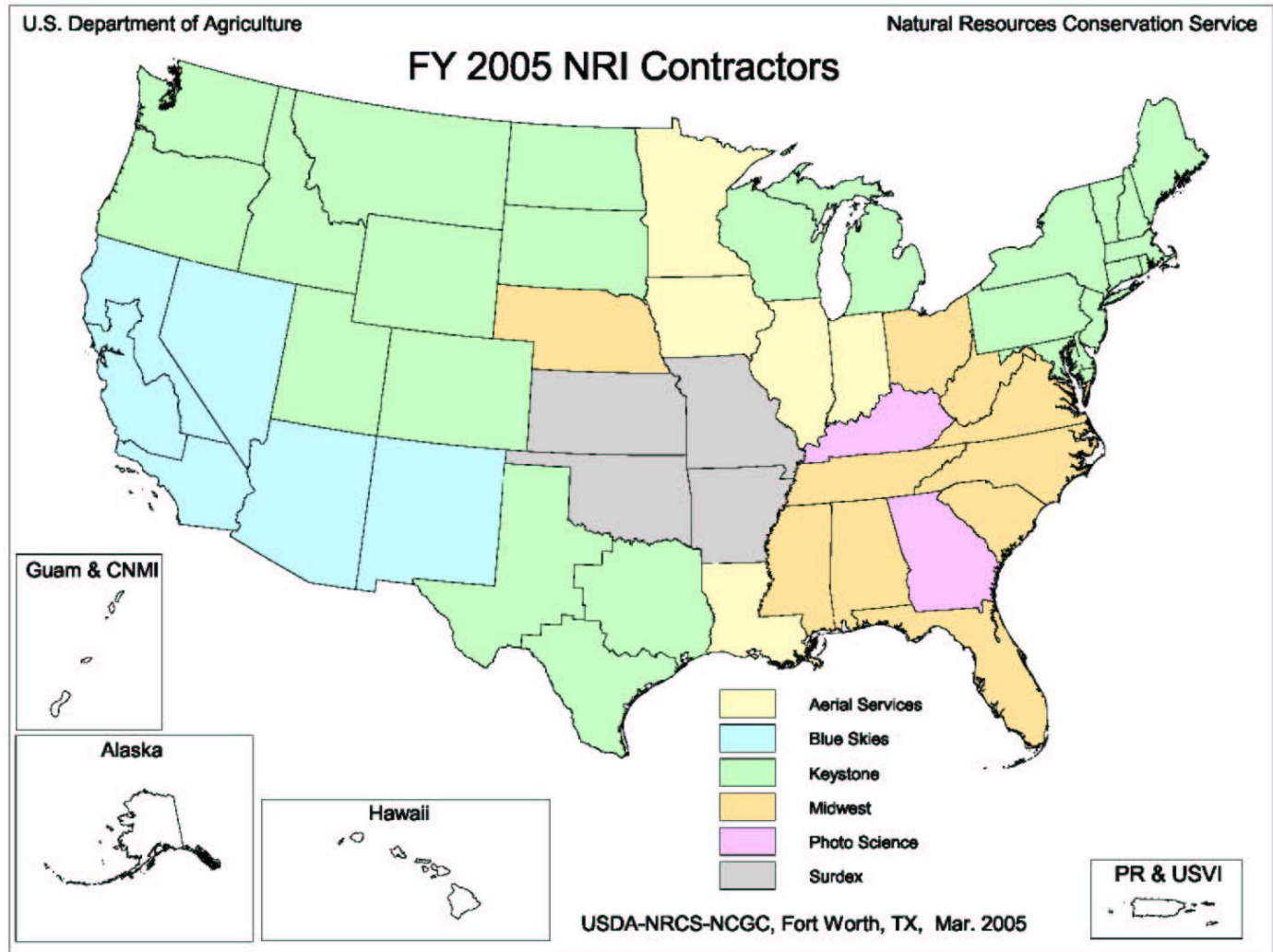
FY 2005 Base Photo Periods



FY 2005 Early Start Counties



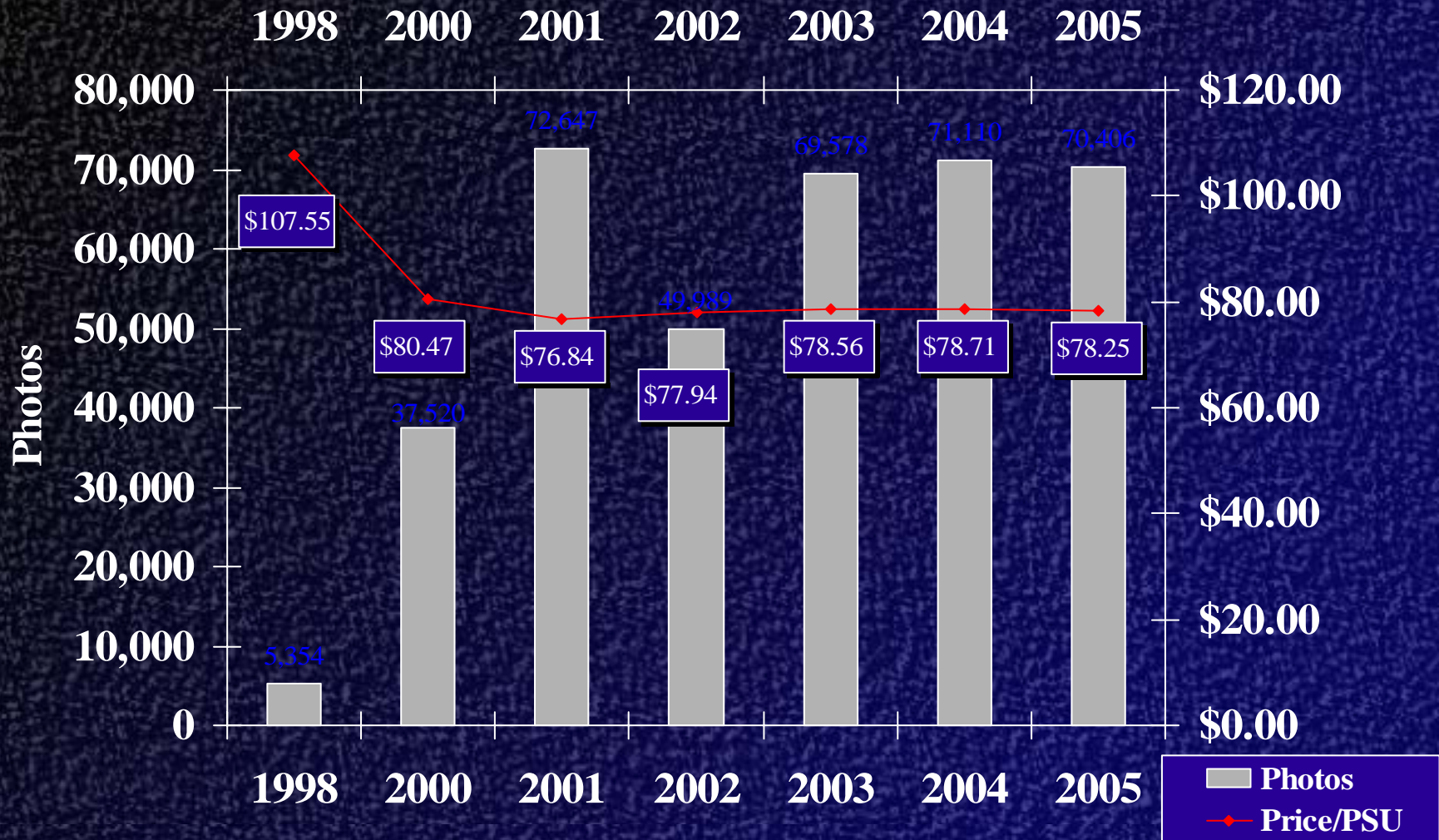
2005 NRI Contractors



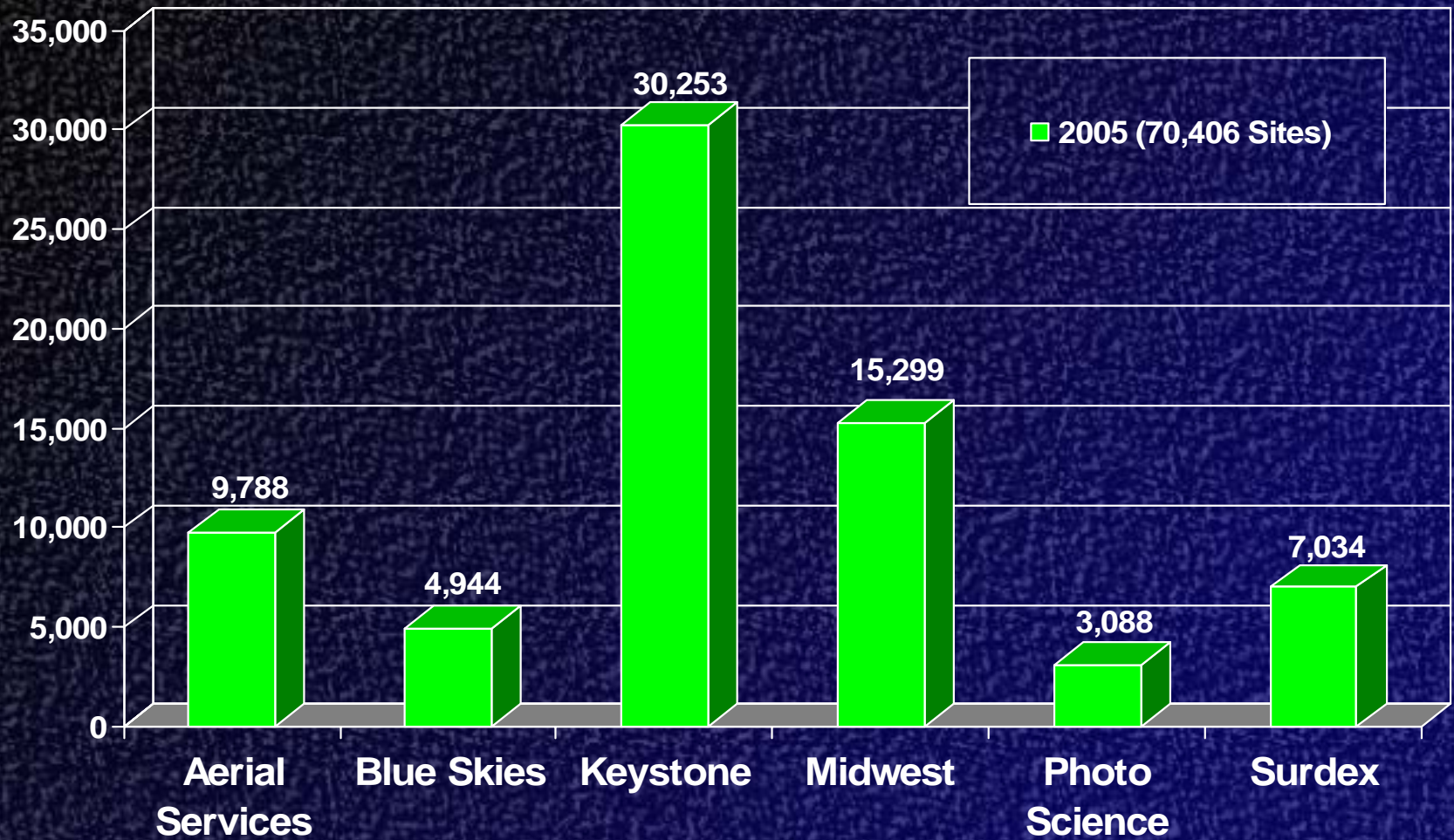
NRI Contract Awards



Photos Contracted & Prices 1998-2005

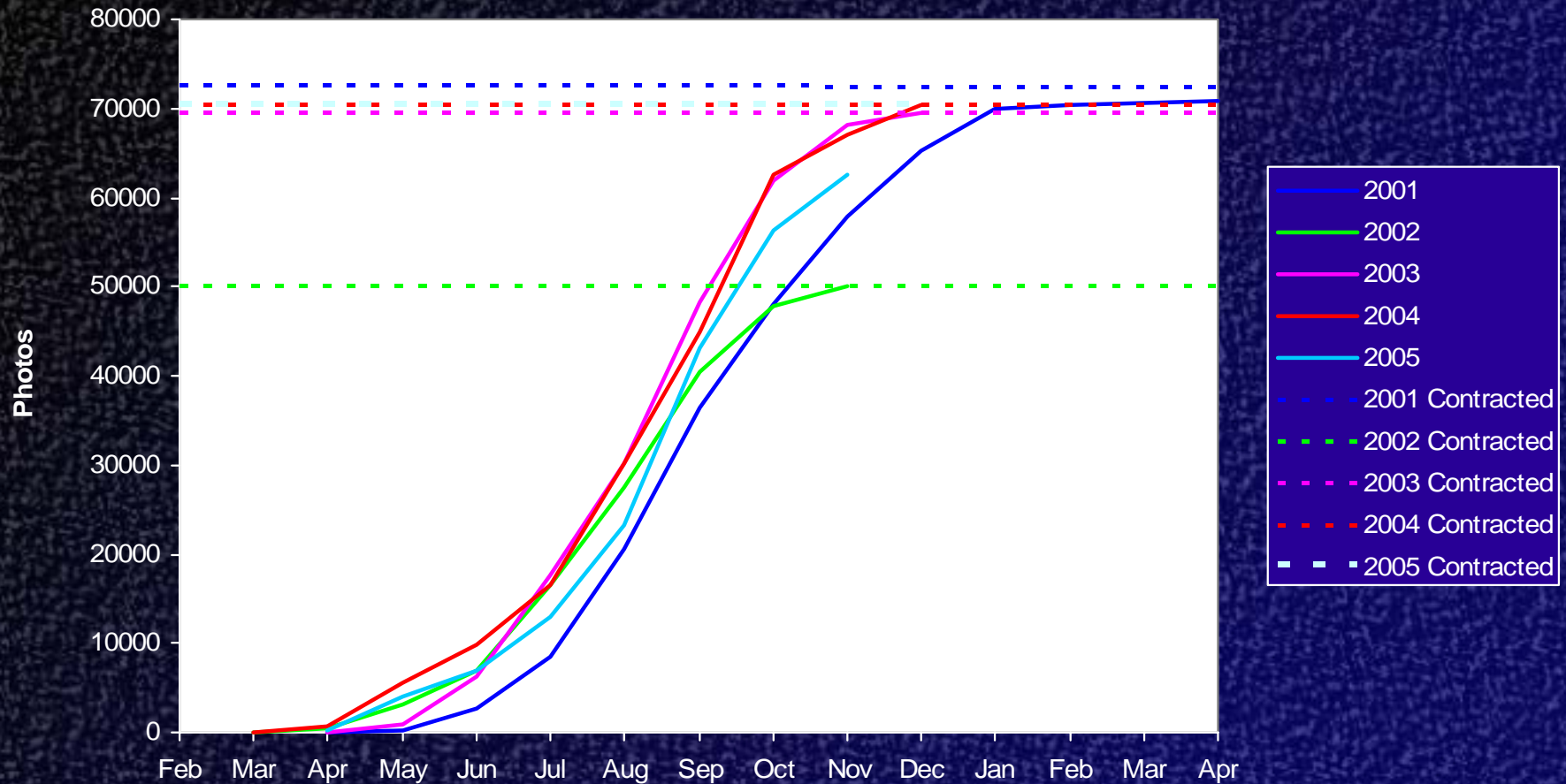


2005 NRI Contract Awards



NRI Photo Deliveries

2001, 2002, 2003, 2004, 2005



Scanning Services

- May 17, 2005, Task Order Modification for scanning services
- 64,810 scans @ \$7.45 each
 - ◆ Total = \$483,181.11 (includes 1.5% APFO Admin. Charge)
- 600 dpi
- Delivered on firewire

Other Issues

- Crab - More rejections than in the past
- Restricted airspace
- Emulsion damage
- Blank scans
- Duplicate scans
- Permanent marker on sleeves
- Debris between film and sleeves
- Corrected labels (old one still partially visible)

2006 NRI Imagery Planning Meeting - Items

- Standardize film sleeves
- North oriented scans
- Early photo periods now mandatory
- Prepare for higher costs because of fuel
- Most contractors indicated they can fly more, however, the SE US required numerous photo season extensions
- In 2006, we will attempt to balance "good" and "bad" weather states among the contractors
- Metadata matching scan to camera report
- "Best Available" DOQ and DEM to be used for orthorectification

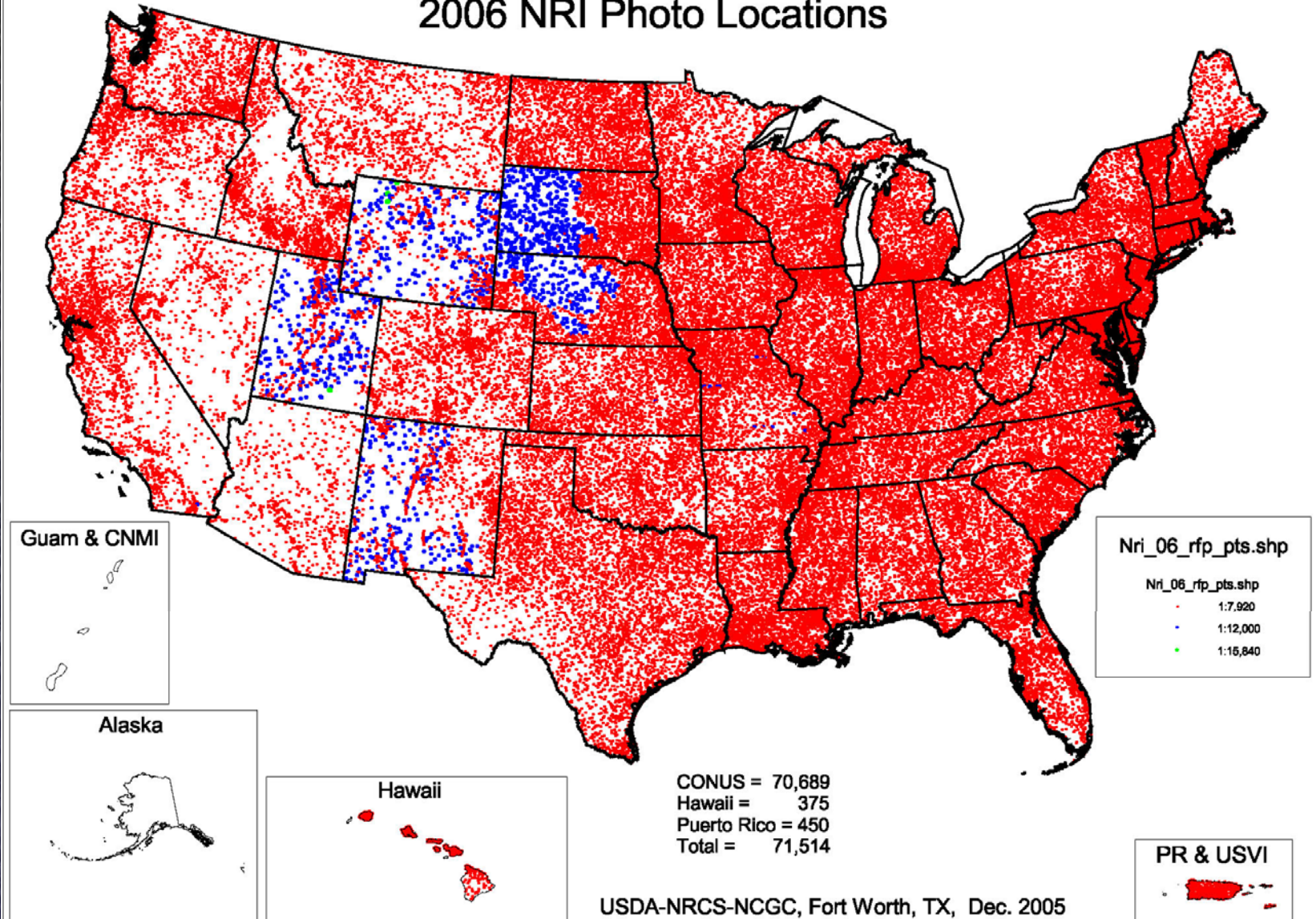
USDA-NRCS-NCGC, Fort Worth, TX, Oct. 26, 2005

2006 NRI Locations (71,514)

U.S. Department of Agriculture

Natural Resources Conservation Service

2006 NRI Photo Locations



USDA-NRCS-NCGC, Fort Worth, TX, Dec. 2005

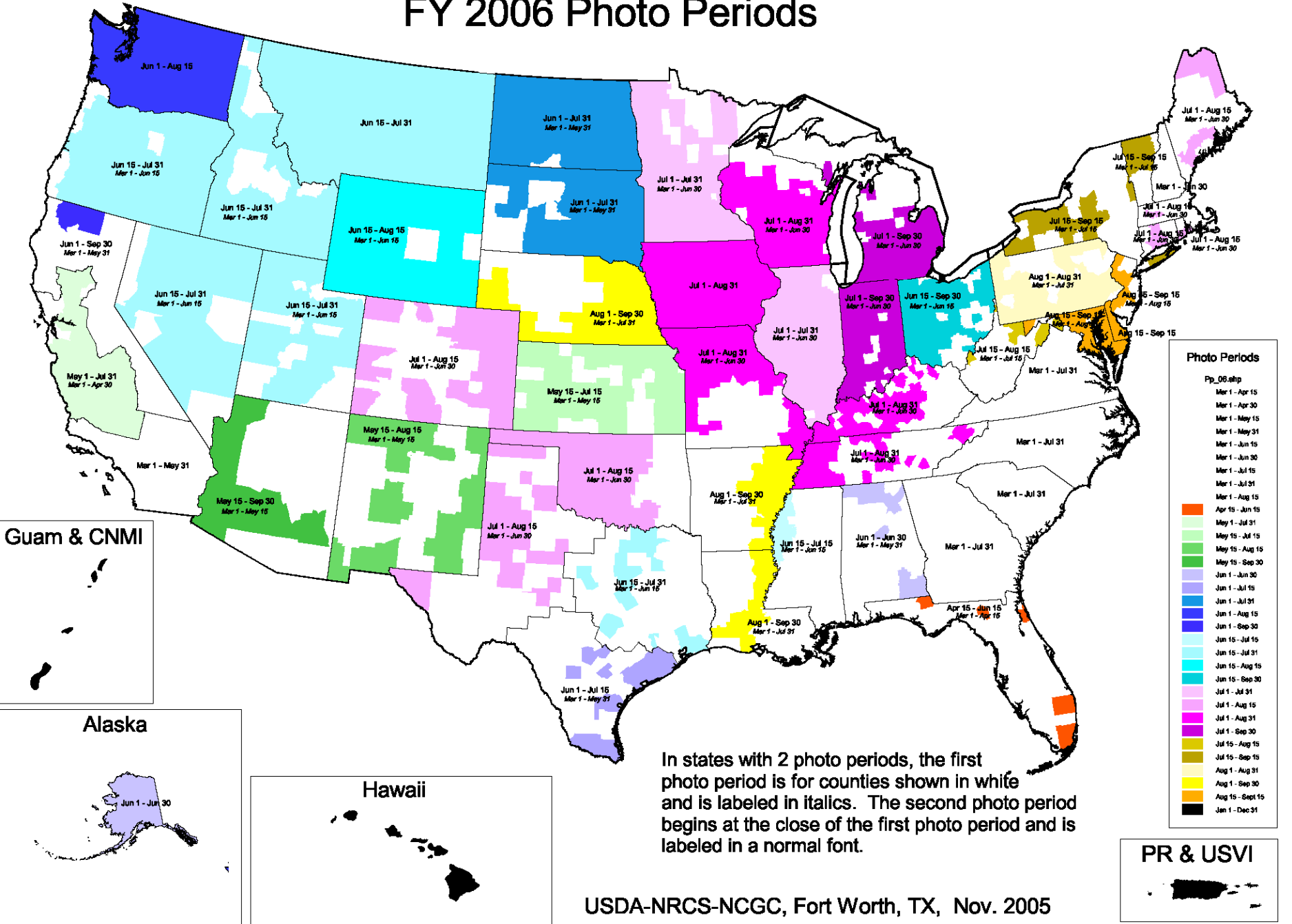
Alabama,1401
Arizona,658
Arkansas,1406
California,2150
Caribbean,450
Colorado,1667
Connecticut,457
Delaware,297
Florida,1953
Georgia,1606
Hawaii,375
Idaho,1624
Illinois,2211
Indiana,1514
Iowa,1759
Kansas,1960
Kentucky,1451
Louisiana,1952
Maine,700
Maryland,1070

Massachusetts,668
Michigan,2063
Minnesota,2352
Mississippi,1713
Missouri,2142
Montana,1493
Nebraska,1714
Nevada,740
New Hampshire,520
New Jersey,603
New Mexico,1386
New York,1701
North Carolina,1567
North Dakota,2014
Ohio,1657
Oklahoma,1539
Oregon,1334
Pennsylvania,1818
Rhode Island,291
South Carolina,1245

South Dakota,1847
Tennessee,1536
Texas,4803
Utah,829
Vermont,573
Virginia,1746
Washington,1364
West Virginia,826
Wisconsin,1850
Wyoming,919

TOTAL 71,514

FY 2006 Photo Periods



NRI_Register

- Streamlined version of LPS
- Simple interface for less experienced users
- Many parameters will be set automatically
 - ◆ Projection
 - ◆ Name and location of input and output files
- Many options will be hidden
 - ◆ NRI is doing single frame orthorectification
- This approach should minimize confusion and reduce mistakes

NRI Register Steps

1. Automatically create the LPS block file
 - Fixed format directories and files
2. Menu to select pre-built .cam files
3. Interface to measure fiducial marks
 - Auto driving and accuracy feedback
4. Interface to measure control points
 - Auto driving, auto populated (DOQ, DEM, GCP)
5. Output files named correctly
 - Creates ortho image, metadata, block file, and triangulation report

NRI_Register Workflow

NRI ORTHO

Segment Selection

State:

County:

Segment:

Year:

Use points from another year

<< Previous
Next >>
Save
Close
Help

NRI ORTHO

Measure Fiducials

Target RMS (pixels):

Maximum RMS (pixels):

Current RMS (pixels):

Display Fiducial Measurement Tool

<< Previous
Next >>
Save
Close
Help

Frame Camera Frame Editor (scan_05109_020201r_20024.tif)

Camera

Year: State:

Camera Serial #: Lens Serial #:

Calibration Date: Camera Name:

Load Camera
OK
Cancel
Help

Camera information

Viewer Fiducial Locator

Camera Interior Orientation

Fiducial Orientation:

Viewer Fiducial Locator:

RMSE 4.43pixels or 188.38microns

Solve

| Point # | > | Color | Image X | Image Y | Film X | Film Y | Residual X | Residual Y |
|---------|---|-------|----------|----------|----------|----------|------------|------------|
| 1 | > | Green | 184.232 | 5651.316 | -112.997 | -112.982 | -2.779 | 0.443 |
| 2 | > | Green | 5676.383 | 507.933 | 113.001 | 113.012 | -2.849 | 1.684 |
| 3 | > | Green | 178.380 | 514.071 | -113.002 | 113.013 | 5.124 | -1.880 |
| 4 | > | Green | 5564.918 | 5651.434 | 113.002 | -112.982 | 8.469 | -2.264 |

OK
Cancel
Help

392.49, -271.73

NRI_Register Workflow

NRI ORTHO

Measure Fiducials

Target RMS (pixels)

Maximum RMS (pixels)

Current RMS (pixels)

Display Fiducial Measurement Tool

<< Previous

Next >>

Save

Close

Help

NRI ORTHO

Measure Control Points

Target RMS (pixels)

Maximum RMS (pixels)

Current RMS (pixels)

Display GCP Measurement Tool

<< Previous

Next >>

Save

Close

Help

Point Measurement [Left view: ortho_05109_020201.tif Right view: scan_05109_020201_2002.tif]

Left image: c:\work\data\nri\NRI_GE-1\ORTH0_1\1\05109\ORTH0_1_1 Right image:

| Point ID | Description | Active | X Reference | Y Reference | Z Reference | X File | Y File |
|----------|-------------|--------|-------------|-------------|-------------|----------|----------|
| 1 | | X | 429527.535 | 377228.435 | 110.369 | 881.000 | 1362.000 |
| 2 | | X | 430133.535 | 377193.435 | 120.763 | 2963.406 | 4084.725 |
| 3 | | X | 430953.535 | 377093.435 | 107.939 | 5084.553 | 4930.890 |
| 4 | | X | 431024.535 | 377194.435 | 146.917 | 5270.857 | 2933.295 |
| 5 | | X | 430257.535 | 377134.435 | 133.610 | 3130.198 | 4114.670 |
| 6 | | X | 430108.535 | 377180.435 | 112.464 | 2599.733 | 2599.670 |
| 7 | | X | 429360.535 | 377177.435 | 110.901 | 503.580 | 3021.481 |

Horizontal: ortho_05109_020201.tif
Vertical: scan_05109_020201.tif
RMSE: 2.6245
Display residuals

NRI ORTHO

Measure Control Points

Target RMS (pixels)

Maximum RMS (pixels)

Current RMS (pixels)

Display GCP Measurement Tool

<< Previous

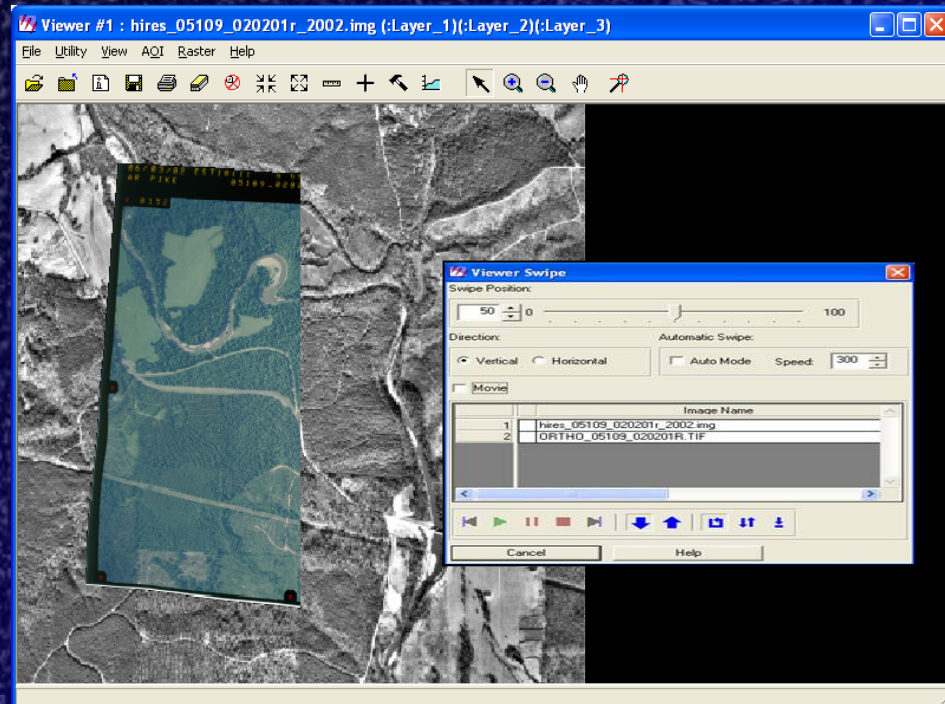
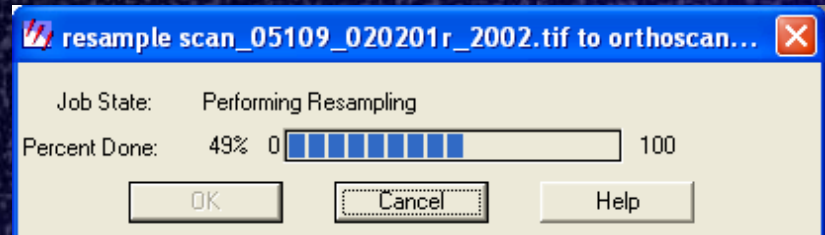
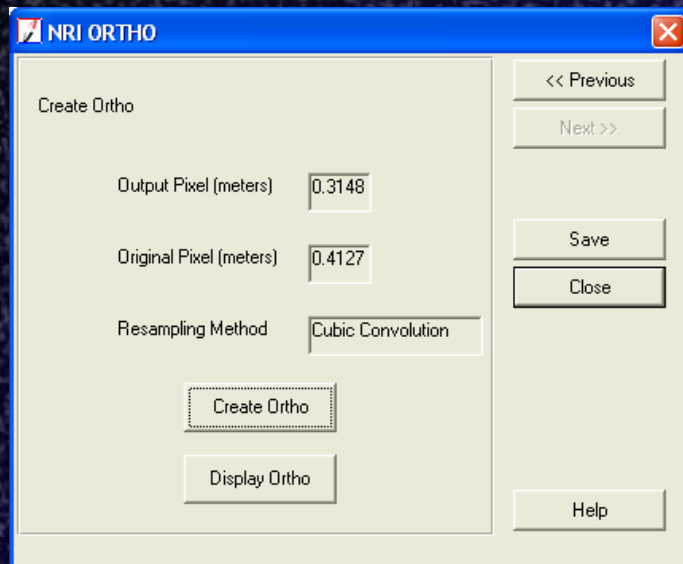
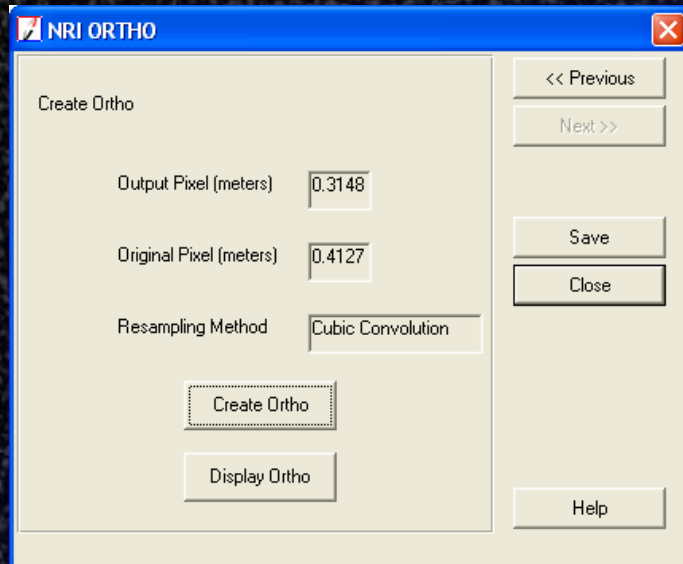
Next >>

Save

Close

Help

NRI_Register Workflow



NRCS Landsat Orders from FAS

